

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1-4 (canceled)

5. (original) An apparatus for controlling a voltage regulator comprising:

a voltage source;

a first and second charge storage devices connected between the voltage source and the voltage regulator;

means for connecting the first storage device to the voltage source and disconnecting it from the second storage device and the voltage regulator until the voltage on the first storage device reaches a predetermined level;

means for disconnecting the first storage device from the voltage source and connecting it to the second storage device and the voltage regulator until the input voltage to the voltage regulator falls below a predetermined level; and

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means for switching the storage devices between the 2 modes of operation.

6. (original) The apparatus according to claim 5, wherein the storage devices are capacitors.

7. (original) The apparatus according to claim 5, wherein the connecting means comprises two switches are connected in series between the voltage source and the first storage device, the other between the two storage devices.

8. (original) The apparatus according to claim 4, wherein the first storage device is substantially larger than the second storage device.

9. (currently amended) A power supply apparatus comprising:

a power supply;

a voltage regulator;

first and second capacitors provided between said power supply and said voltage regulator in parallel to said power supply;

a first switch provided between said power

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supply and said first capacitor to open or close in response to a first control signal;

a second switch provided between said power supply and said second capacitor to open or close in response to a second control signal; and

a control circuit which generates said first and second control signals to said first and second switches such that said second switch opens and then said first switch closes when a voltage of one of said first and second capacitor capacitors decreases to a first predetermined level, and such that said first switch opens and said second switch closes after a first predetermined time period from the closing said first switch,

wherein the voltage regulator outputs a voltage, and

wherein the control circuit comprises:
a comparator; and
a flip-flop connected to an output of
said comparator.

10. (original) The power supply apparatus according to claim 9, wherein said first predetermined

time is a time period until a voltage of said first capacitor reaches a second predetermined level after said first switch is closed.

11. (original) The power supply apparatus according to claim 9, wherein said control circuit generates said first and second control signals to repeat a switching operation in which said second switch opens and then said first switch closes when the voltage of said second capacitor decreases to said first predetermined level, and said first switch opens and said second switch closes after said first predetermined time period from the closing said first switch.

12. (original) The power supply apparatus according to claim 9, wherein said control circuit monitors the voltage of said second capacitor and generates said first and second control signals based on the monitoring result.

13. (original) The power supply apparatus according to claim 9, wherein said second capacitor is larger in capacitance than said first capacitor.

14-19 (canceled)

20. (new) The power supply apparatus as claimed in claim 9, wherein the flip-flop comprises a pair of NAND gates and a pair of AND gates.

21. (new) The power supply apparatus as claimed in claim 20, further comprising an inverter,

wherein an output of the comparator goes directly to an input of a first one of said pair of NAND gates, and said output of the comparator is connected to a second one of said pair of AND gates through said inverter.

22. (new) The power supply apparatus according to claim 21, wherein an output of said second NAND gate is connected to a second input of said first NAND gate and the output of said first NAND gate is connected to a second input of said second NAND gate.

23. (new) The power supply apparatus according to claim 22, wherein the output of the first NAND gate is connected to an input of a first AND gate and the output of

said second NAND gate is connected to an input of a second AND gate, and

wherein the control circuit further comprises a START/ENABLE line, a second input of each of said pair of AND gates being connected to said START/ENABLE line.

24. (new) The power supply apparatus as claimed in claim 23, wherein said first AND gate is connected to said first switch and said second AND gate is connected to said second switch so that when the voltage of one of said first and second capacitors decreases to said first predetermined level, said second switch opens and then said first switch closes.